



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,968	02/06/2004	Paul D. Shirley	MIO 0112 PA/40509/272	7341
23368 7590 10/24/2008 DINSMORE & SHOHL LLP ONE DAYTON CENTRE, ONE SOUTH MAIN STREET SUITE 1300 DAYTON, OH 45402-2023				
EXAMINER EDWARDS, LAURA ESTELLE				
ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
10/24/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/773,968

Applicant(s)

SHIRLEY, PAUL D.

Examiner

Laura Edwards

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
4a) Of the above claim(s) 21-37 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/CDC)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4, 16, 18, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Takamori et al (US 2002/0152954), hereinafter referred to as Takamori.

Takamori provides a resist application device comprising a rotatable substrate support (10; see Fig. 8); a resist dispenser (RS) configured to deposit resist onto a substrate positioned on said support; a control fluid supply (GS) effecting localized change in a rate of evaporation of said deposited resist, the control fluid supply comprising a gas pressure source (i.e., gas); and a controller (100; see [0105])) connected to the control fluid supply to vary placement of the gas control fluid onto the deposited layer of resist.

With respect to claim 2, see nozzles (63a).

With respect to claim 3, see [0099].

With respect to claim 4, the nozzles (63a) are fixed in an area exterior to central resist nozzles (61).

With respect to claim 16, see chuck (10), coating housing/module is enclosed to effect a controlled environment, fluid supply (GS), and controller (100).

With respect to claim 18, inherently, the control fluid includes air or an inert because both are known and conventionally used in the art.

Claims 1-10 and 12-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuyama (US 2002/0176936).

Matsuyama provide a resist application device comprising a rotatable substrate support (60); a resist dispenser (82) configured to deposit resist onto a substrate positioned on said support; a control fluid supply (84) effecting localized change in a rate of evaporation of said deposited resist, the control fluid supply (see Fig. 7) configured to dispense a gas containing mist therein, the gas being (air or inert gas); and a controller (80) cooperative with said control fluid supply such that said control fluid supply varies the placement of said control fluid onto said deposited resist to effect a substantially uniform thickness layer thereof (see Figs. 4+).

With respect to the use of plural fluid dispensing nozzles, the use of plural outlets (85) defines plural nozzles.

With respect to the positioning of the nozzles, an arm (69) enables the fluid dispensing nozzles to be positioned as desired with respect to the surface of the substrate.

With respect to claim 5, see controller (80) with pressure sensor for sensing parameter of pressure with respect to the control fluid as evidenced by [0049].

With respect to claim 7, the fluid supply includes air to define airflow supply.

With respect to claims 8-10, see [0057].

With respect to claims 12 and 13, the arm (69) enables all nozzles of the solution dispenser and fluid supply to move relative to the substrate.

With respect to claims 14, 16, and 20, the application device is enclosed in the housing (17a) and is environmentally controlled as evidenced by [0057].

Claims 1-7, 10, 12-15, 16-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tateyama et al (US 5,919,520), hereinafter referred to as Tateyama.

Tateyama et al provide a resist application device comprising a rotatable substrate support (10); a moveable resist supply (BL) configured to deposit resist onto a substrate positioned on said support; a control fluid supply (80; see Fig. 2) effecting localized change in a rate of evaporation of said deposited resist, said control fluid supply including a supply of pressurized gas (i.e., air); and a controller (CPU, 67) cooperative with said control fluid supply such that said control fluid supply varies the placement of said control fluid onto said deposited resist to effect a substantially uniform thickness layer thereof (see Figs. 2-5).

With respect to claim 3, plural fluid dispensing nozzles are defined by the use of plural spouting holes (col. 8, lines 45-48).

With respect to the positioning of the nozzles, an arm (40) enables all nozzles to be positioned as desired with respect to the surface of the substrate.

With respect to claim 5, see controller (67) with height sensor (66) for sensing parameter of distance of the nozzles with respect to the surface of the treated substrate.

With respect to claim 7, the fluid supply includes air to define airflow supply.

With respect to claims 12 and 13, the arm (40) enables all nozzles of the solution dispenser and fluid supply to move relative to the substrate.

With respect to claims 14-18, the application device is enclosed in a housing or module as evidenced by Fig. 7 wherein processing of the substrate takes place.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tateyama et al (US 5,919,520) in view of Matsuyama (US 2002/0176936).

The teachings of Tateyama have been mentioned above but Tateyama fails to teach or suggest humidity or temperature control. However, it was known in the art at the time the invention was made, to provide humidity and/or temperature control in airspace adjacent the wafer chuck to control the environment about the substrate during processing as evidenced by Matsuyama [0057]. It would have been obvious to one of ordinary skill in the art to provide humidity and/or temperature control in airspace adjacent the wafer chuck as taught by Matsuyama in the device of Tateyama in order to control the environment about the substrate during processing to provide for uniform treatment including coating of the substrate.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuyama (US 2002/0176936) in view of Chappa et al (US 7,077,910), hereinafter referred to as Chappa.

Matsuyama provide a resist application device as mentioned above but is silent concerning the operation of the coating device in an automated mode and manual mode to allow the operator input in the latter mode. However, it was known in the coating art, at the time the invention was made, to provide for manual or automated operation of coating parameters in a coating device with the manual operation enabling operator input as evidenced by Chappa (col. 10, lines 51-62). In light of the teachings of Chappa, it would have been obvious to one of ordinary skill in the art to provide an automated mode and manual mode of control in the Matsuyama device in order to facilitate operation of the coating device with or without the need of an operator.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tateyama et al (US 5,919,520) in view of Chappa et al (US 7,077,910).

Tateyama provides a resist application device as mentioned above but is silent concerning the operation of the coating device in an automated mode and manual mode to allow the operator input in the latter mode. However, it was known in the coating art, at the time the invention was made, to provide for manual or automated operation of coating parameters in a coating device with the manual operation enabling operator input as evidenced by Chappa (col. 10, lines 51-62). In light of the teachings of Chappa, it would have been obvious to one of ordinary skill in the art to provide an automated mode and manual mode of control in the Tateyama device in order to facilitate of operation of the coating device with or without the need of an operator.

Response to Arguments

Applicant's argument filed 9/29/08 has been fully considered but is not persuasive.

Applicant contends that the instantly claimed invention is not anticipated by Matsuyama nor Tateyama because Matsuyama teaches control fluid supply in the form of a mist and Tateyama control fluid supply in the form of a liquid or solvent.

These arguments are not deemed persuasive because Matsuyama provides for a control fluid supply that is gas based but having mist therein. The use of the term "comprising" to define the claimed invention leaves the claimed invention open to include gas control fluid supply having a minimal amount of liquid or mist therein. The claimed invention is still deemed anticipated by Matsuyama. As for Tateyama, a control fluid supply in the form of an air nozzle

(80) is provided such that the 102(b) rejection stands. Applicant's claimed invention is deemed too broad to overcome the cited prior art including newer art to Takamori.

Applicant contends that because the instantly claimed invention is not anticipated by Matsuyama nor Tateyama, a prima facie case of obviousness would therefore not stand with Matsuyama or Tateyama [as primary references].

This argument is deemed moot because the instantly claimed invention still reads on the teachings of both Matsuyama and Tateyama, thus Matsuyama and Tateyama remain via primary references in the 103 rejections. A prima facie case of obviousness has been established and the proper motivation for the combination of teachings of the primary references with the secondary references has been supplied above as required by Graham v. Deere.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura Edwards/
Primary Examiner
Art Unit 1792

le
October 22, 2008